# **MMH101**



### INDUSTRIAL SYSTEM OF MATERIAL GRINDING



### Experimental capabilities

- Industrial grinding systems operator intended to the reduction of the volume of materials and their valorization (shred of paper or cardboard can be used as working materials for our hydraulic briquette press line)
- Functional analysis, 2D & 3D model under SolidWorks
- Shears twin-rotor system commonly used in many sectors of activity (administration, communities, food processing, plastics processing, chemistry, etc ...)
- Preventive and Corrective maintenance: assembly / disassembly / control of mechanical components, components replacement (guiding, sealing, lubrication, etc ...)
- Improve the operation, adding functionality (as option chosen, integration of a press rammer pneumatic technology, hydraulic or electrical, hydraulic motorization passageway of the cutting block)
- Assembly / mechanical disassembly following operating ranges and operating procedures
- Activity of handling: Use of lift table or workshop crane for elements of significant mass
- Measurement and calculation of physical quantities (electrical / mechanical power, torque, speed, ...)
- This industrial system of materials grinding allows to reduce the volume of waste and allow their storage for the purpose of their removal or recycling
- Support for set-up activities, diagnosis and replacement of components
- The system is functionally autonomous or can be used upstream of our briquettes press MMH103 following the work of material used in order to complete our briquettes production line MLP. Then communication between different machines of the line and possibility of Ethernet supervision.
- Teaching concerned: MEI Bac Pro, BTS, etc ...

## **MMH101**



### PRINCIPLE OF OPERATION

Design, manufacturing, testing, commissioning in our workshops.

MMH 101 bench is representative of industrial shredders shears birotor used everywhere:

Offices, industries, laboratories, communities, etc ...

Whether to destroy documents, of the packaging waste or of the contaminated waste, they can adapt to most cases where one wishes to destroy or fragment for safety reasons or for simple volume reduction. include:

- Waste paper and cardboard and wood packaging- transport valued for the manufacture of briquettes or heat logs
- The packagings and brand products or scrap of luxury goods to avoid harmful fraudulent reuse to the manufacturer and of the product brand image
- New or used metal or plastic containers: Canisters, bottles, flasks.
- Electronic products, cards and sensitive components for recycling or safety.
- Smart cards, banking and others. Floppy disks, computer media and audio-video.CD
- Used dangerous products: household batteries, pharmaceuticals and medical accessories.
- Recycling and the processing of food products

Because provided with a device allowing a complete and easy cleaning of the knives, the maintenance is facilitated: interest when it is necessary to grind clean products that we do not want to pollute with the residues of the previous grinding. It is equipped with an automatic Inversion-Recovery-Stop system in case of a jam. This device is managed by a PLC Twido type via a current sensor. This PLC may be connected to a downstream machine for the management of conditions of saturation machine (full hopper of the briquette press) and may be supervisable via an option supervisory of the briquette line. It can be equipped with a motorized rammer system that facilitates the grinding according to the type of materials to conduct ameliorative maintenance activities. Different options are proposed to increase activities (see description) This grinder is in compliance with "CE" specifications and the latest safety standards. It is manufactured with components of leading brands and quality.

The robust design of this equipment makes it perfectly suited for school use.

Illustrations



**Technical specifications** 

- Chassis of mechanically welded of contained size supporting the set of grinding and the cabinet, equipped with 4 wheels with brakes, door safety switch for the setting up of the crate of ground materials recovery or the connection to the line of briquette
- Electrical box with glazed door equipped with a slot for integration of removable breadboards of engine power wiring, of a signaling verrine of machine status (turned on / in operation / default), of a PLC Twido with Ethernet connection associated with a current sensor for the automatic management (direction reversal) if in case of jam, of protection (switch, circuit breaker, preventa, ..) control member in 24Volt (changeover contactors ..). Removable breadboard.
- Control panel located on the box containing the operating commands of the grinder, emergency stop, decoring, time meter with signaling of the states and a removable plastron for integration of additional components
- Cut-block of shears twin-rotor composed of the scraper and its knives. Depending on the desired shreds type, possibility of combination and assembly of various shapes and widths of knives
- The gearbox composed of pinions, bearings for driving the output shafts of knives at different speeds and direction

Geared motor 3 kW with a epicycloidal reducer-type equipped with a quick connect harting on the box Large hopper equipped with a safety sensor of transparent door, 80L capacity mini

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Large crate for the recovery of shreds, equipped with wheels.

#### Options MMH110 to MMH 116

- MMH 110: Pneumatic motorization rammer to facilitate the grinding of larger waste within the ameliorative maintenance activities. Possibility of electric motorization rammer or hydraulic on request
- MMH 111: Grille kit 20mm of screening with special knives for reducing the ground materials type small crates before compaction by our press briquetting MMH103
- MMH112: Remote transmission belt and chain with torque limiter for ameliorative maintenance activity, study of kinematic chains, advantage and disadvantage of different solutions, etc...
- MMH113: Breadboard inverter for the motor of the cutting block: electrical wiring activity, energy consumption study, etc...
- MMH 114: Soft Starter breadboard: study of the advantages and disadvantages of this type of components
- **MMH 115**: Hydraulic motor to mount instead of the electric motor of the cutting block comes with its hydraulic unit. Solution requiring a low flow rate for a very high torque

MMH116: Maintenance compartmentalized briefcase containing a epicyclic reduction gear with a spare parts set (bearing, seal ...) to study activity and maintenance

#### Services required

- Power supply : 400Vac 50 Hz 16 A
- Power supply Type: 3 phase(s) + Neutral + Earth.
- Compressed air supply: 6-8 bars (dry air /oil-free) pneumatic plugger option
- Low sound level (low shaft output speed)
- Dimensions: (LxWxH mm): 1300 x 730 x 1800
- weight (Kg): 360

Note : if the equipment installation is operated by our staff, all supplies and exhaust connections required must stand at less than 2m from the machine

#### **Documentation**

- Instructions manual
- Complete technical file
- All wiring schematics and mechanical under 2D & 3D SolidWorks
- Practice work with operating Ranges & Operating procedures
- Program + software TwidoSuite
- EC Declaration of Conformity.
- ISO 9001 Certification.Kit supplied in paper and digital editable

### Additional compatible equipments

Briquette compacting press Ref. : MMH 103 Shred conveyor Ref. : MMH 106 Option briquette line supervision via Ethernet communication, for controlling remote Ref. : MMH 800

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automated system with selection of modules.

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